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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,110	10/12/2004	Henry K Obermeyer	HKO-6Axis-USNP	2281
7590 Santangelo Law Offices 125 South Howes Third Floor Fort Collins, CO 80521		02/22/2008	EXAMINER OSORIO, RICARDO	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 02/22/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/511,110

Applicant(s)

OBERMEYER ET AL.

Examiner

RICARDO L. OSORIO

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5,7-9,12-15,17-19,23,24,31,32,35,38 and 101 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,7-9,12,19,23,24,31,32,35,38 and 101 is/are rejected.
- 7) ☒ Claim(s) 13-15,17 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/12/04, and 1/16/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1, 2, 5, 7-9, 12, 19, 23, 31, 32, 35, 38 and 101 rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al. (6,333,733).

In claim 1, Anderson discloses a multi-axis input transducer apparatus (see title) comprising: an at least quinary input element capable of input with respect to at least five frames of reference (see Fig. 3), a reflective element (Fig. 8B, character 19) responsive to radiation from a source (Fig. 8B, character 17), capable of emitting radiation eventually incident upon said reflective element (col. 3, lines 18-24, and ; and at least one reflected radiation detector (Fig. 6, characters M1-M3) responsive to radiation from said reflective element (col. 8, lines 53-68).

As to claim 2, Anderson teaches at least a sextet input element capable of input with respect to at least six frames of reference (See Fig. 3).

As to claim 5, Anderson teaches said source of radiation comprises a source of electromagnetic radiation (col. 2, lines 9-11, and col. 8, lines 64 and 65).

As to claims 7-9, Anderson discloses six frames of reference comprising three translational frames of reference and three rotational frames of reference (See Fig. 3, and col. 7, lines 47-50).

As to claim 12, Anderson further teaches a comparative non-reflective element upon which radiation from said source is eventually incident (Fig. 1, character 13, and col. 4, lines 58-66).

As to claim 19, Anderson teaches said reflective element is established extra-radially of said source (col. 5, lines 24-31).

As to claim 23, Anderson teaches that said at least quinary input element comprises a joystick (col. 1, lines 27-29 and Fig. 3, reference characters 32 and 34).

As to claim 31, Anderson discloses a joystick (see Fig. 3) comprising a radiation source (Fig. 8, character 17), a reflector (Fig. 8, character 19), and reflected radiation sensor (Fig. 6, characters M1-M3), at least one of which is movable with respect to at least one other of said three elements in at least three degrees of freedom (col. 8, lines 53-68), wherein said radiation source projects radiation eventually incident upon said reflector (col. 8, lines 59-62), said reflector reflects a varying reflected optical signal to said reflected radiation sensor in a manner which varies in at least three degrees of freedom (col. 5, lines 39-52 and 59-68), and said reflected radiation sensor senses at least a portion of said varying reflected optical signal (col. 8, lines 57-62).

As to claim 32, Anderson teaches of a visible light source of radiation (col. 2, lines 9-11, and col. 8, lines 64 and 65).

As to claim 35, further, Anderson teaches the returned optical signal is detected as an image incident on an array of image sensing elements (Figs. 4 and 6, characters M1-M3).

As to claim 38, further, said reflected radiation sensor comprises a photo detector (col. 2, line 8) and the radiation source comprises time sequenced light emitters (col. 5, lines 39-41).

As to claim 101, Anderson discloses a multi-axis joystick (see Fig. 3, character 30) comprising: a finger operable first portion at least quiaxially responsively connected to a second portion (Fig. 3, character Z, on top portion (first portion) is finger operable and moves in five degrees of freedom when cylindrical side portion (second portion) in said five degrees of freedom); and a hand operable second portion (cylindrical portion of operating means 34) at least uniaxially responsively connected to a third portion (third portion is control lever 32 which moves along with operating means 34), each movable connection generating a signal in response to relative movement (see Fig. 3, and col. 7, lines 16-32 and 47-50).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (see above in view of Noll (6,565,662).

As to claim 24, further, Anderson does not specifically teach the reflective element comprising an annular reflective element.

Noll teaches of a reflective element comprising an annular reflective element (see col. 3, lines 28-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the disc or annular reflective element, as taught by Noll, in the device of Anderson to optically detect the position of the actuator without the need of a large number of cables or other lines (see col. 1, lines 23-25).

***Allowable Subject Matter***

5. Claims 13-15, 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 13-15, 17 and 18 are allowable since certain key features of the claimed invention are not taught or fairly suggested by the prior art. In claim 13, **"said comparatively non-reflective element forms at least one abrupt border with said reflective element where there is an abrupt change from reflective to comparatively non-reflective"**. The closest prior art however

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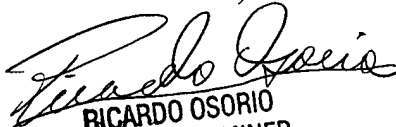
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singularly or in combination fails to anticipate or render the above underlined limitations obvious.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICARDO L. OSORIO whose telephone number is (571) 272-7676. The examiner can normally be reached on MONDAY-THURSDAY 7:00 am-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BIPIN SHALWALA can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
RICARDO OSORIO  
PRIMARY EXAMINER  
Technology Division: 2629

RLO  
February 18, 2008